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- controlled
bubble
flow
- (d) a stirrer disposed within the reactor vessel;
 - (f) an inlet and outlet operatively connected to the reactor vessel;
 - (g) a controlled source of carbon dioxide operatively connected to the inlet, and, wherein the outlet is configured to avoid increasing internal pressure of the reactor vessel.

Please add the following new claims:

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27. The device of claim 26, wherein the stirrer is magnetically coupled to a stirring system.

28. The device of claim 27, wherein the stirring system rotates the stirrer at 100 rpm.

29. The device of claim 26, further comprising a porous sparger operatively connected to the inlet. 7

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30. The device of claim 26, further comprising a valve to control the flow of carbon dioxide operatively connected to the reactor vessel.

31. The device of claim 30, wherein the valve is an electro-valve or a solenoid valve.

32. The device of claim 26, further comprising an electrode to measure pH being disposed within the reactor vessel.

33. The device of claim 26, wherein the reactor vessel includes a coating to avoid deposition or incrustation of carbonated calcium phosphate.

34. The device of claim 26, wherein the reactor vessel is fashioned from borosilicate glass or stainless steel.

35. The device of claim 26, wherein the reactor vessel has a volume ranging from 1 to 500 liters.

36. The device of claim 26, wherein the reactor vessel has a volume ranging from 1 to 150 liters.

37. The device of claim 26, wherein the reactor vessel further comprises a double jacket.

38. The device of claim 26, further comprising a thermo-circulator.

39. The device of claim 26, wherein the heating element maintains the reactor vessel temperature between 5 and 50 °C.

40. The device of claim 26, wherein the implant support comprises a hook.

41. The device of claim 26, further comprising an automated system to measure, record and/or control parameters as a function of time.

42. The device of claim 41, wherein said parameters are selected from the group consisting of pH, temperature, carbon dioxide flow, calcium concentration, phosphate concentration, and carbonate concentration.

43. The device of claim 26, further comprising a membrane filter operatively connected to the inlet.

44. The device of claim 43, wherein the membrane filter is a 0.2 micron membrane filter.

45. A device for coating an implant comprising:

- (a) a reactor vessel;
- (b) a heating element capable of maintaining a temperature between 5 and 50 °C, operatively connected to the reactor vessel;
- (c) an implant support operatively connected to the reactor vessel;
- (d) a stirrer disposed within the reactor vessel, which is magnetically coupled to a stirring system;
- (e) an electrode to measure pH operatively connected to the reactor vessel;
- (f) an inlet operatively connected to the reactor vessel and operatively connected to a valve to control the flow of carbon dioxide;
- (g) a source of carbon dioxide operatively connected to the valve to control the flow of carbon dioxide; and
- (h) an outlet operatively connected to the reactor vessel, wherein the outlet is

configured to avoid increasing internal pressure of the reactor vessel.

46. A device for coating an implant comprising:

- (a) a reactor vessel;
- (b) a heating element capable of maintaining a temperature between 5 and 50 °C, operatively connected to the reactor vessel;
- (c) an implant support operatively connected to the reactor vessel;
- (d) a stirrer disposed within the reactor vessel, which is magnetically coupled to a stirring system;
- (e) an electrode to measure pH operatively connected to the reactor vessel;
- (f) an inlet operatively connected to the reactor vessel and operatively connected to a valve to control the flow of carbon dioxide;
- (g) a source of carbon dioxide operatively connected to the valve to control the flow of carbon dioxide;
- (h) an outlet operatively connected to the reactor vessel, wherein the outlet is configured to avoid increasing internal pressure of the reactor vessel; and
- (i) an automated system to measure, record and/or control parameters selected from the group consisting of pH, temperature, carbon dioxide flow, calcium concentration, phosphate concentration, and carbonate concentration.--